AMENDMENT

In the Claims:

Please cancel claims 1-13 without prejudice or disclaimer.

Please enter the following new claims 14-38:

14. (New) A pharmaceutical parathyroid hormone (PTH) antagonist, wherein the PTH antagonist comprises a peptide having a contiguous portion of human PTH having an amino acid sequence set forth in SEQ ID NO:1 (PTH_{1-84}), or a conservatively substituted variant thereof, exhibiting PTH antagonist activity in a therapeutically effective, but non-toxic amount, wherein the PTH antagonist has the following characteristics:

a) the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 2 through position 34 of SEQ ID NO:1 (PTH_{1-84}); and

b) the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

15. (New) The antagonist of claim 14, wherein the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 3 through position 28 of SEQ ID NO:1 (PTH_{1-84}), and the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

16. (New) The antagonist of claim 14, wherein the PTH antagonist is selected from the group consisting of SEQ ID NO:2 (PTH_{2-84}), SEQ ID NO:4 (PTH_{3-84}), SEQ ID NO:5 (PTH_{28-84}), and SEQ ID NO:3 (PTH_{34-84}).

17. (New) The antagonist of claim 14, further comprising a pharmaceutical carrier or excipient.

18. (New) A method for affecting the binding of parathyroid hormone to a parathyroid hormone receptor through the use of a parathyroid hormone antagonist comprising the administration of a peptide having a contiguous portion of human PTH having an amino acid sequence set forth in SEQ ID NO:1 (PTH_{1-84}), or a conservatively substituted variant thereof, exhibiting PTH antagonist activity in a therapeutically effective, but non-toxic amount, wherein the PTH antagonist has the following characteristics:

a) the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 2 through position 34 of SEQ ID NO:1 (PTH_{1-84}); and

b) the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

19. (New) The method of claim 18, wherein the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 3 through position 28 of SEQ ID NO:1 (PTH_{1-84}), and the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

20. (New) The method of claim 18, wherein the PTH antagonist is selected from the group consisting of SEQ ID NO:2 (PTH_{2-84}), SEQ ID NO:4 (PTH_{3-84}), SEQ ID NO:5 (PTH_{28-84}), and SEQ ID NO:3 (PTH_{34-84}).

21. (New) The method of claim 18, wherein the PTH antagonist is administered together with a pharmaceutical carrier or excipient.

22. (New) A method for treating a patient having hyperparathyroidism comprising administering a peptide having a contiguous portion of human PTH having an amino acid sequence set forth in SEQ ID NO:1 (PTH_{1-84}), or a conservatively substituted variant thereof, exhibiting PTH antagonist activity in a therapeutically effective, but non-toxic amount, wherein the PTH antagonist has the following characteristics:

a) the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 2 through position 34 of SEQ ID NO:1 (PTH_{1-84}); and

b) the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

23. (New) The method of claim 22, wherein the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 3 through position 28 of SEQ ID NO:1 (PTH_{1-84}), and the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

24. (New) The method of claim 22, wherein the PTH antagonist is selected from the group consisting of SEQ ID NO:2 (PTH_{2-84}), SEQ ID NO:4 (PTH_{3-84}), SEQ ID NO:5 (PTH_{28-84}), and SEQ ID NO:3 (PTH_{34-84}).

25. (New) The method of claim 22, wherein the PTH antagonist is administered together with a pharmaceutical carrier or excipient.

26. (New) A method for treating a patient having renal osteodystrophy comprising administering a peptide having a contiguous portion of human PTH having an amino acid sequence set forth in SEQ ID NO:1 (PTH_{1-84}), or a conservatively substituted variant thereof, exhibiting PTH antagonist activity in a therapeutically effective, but non-toxic amount, wherein the PTH antagonist has the following characteristics:

a) the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 2 through position 34 of SEQ ID NO:1 (PTH_{1-84}); and

b) the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

27. (New) The method of claim 26, wherein the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 3 through position 28 of SEQ ID NO:1 (PTH_{1-84}), and the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

28. (New) The method of claim 26, wherein the PTH antagonist is selected from the group consisting of SEQ ID NO:2 (PTH_{2-84}), SEQ ID NO:4 (PTH_{3-84}), SEQ ID NO:5 (PTH_{28-84}), and SEQ ID NO:3 (PTH_{34-84}).

29. (New) The method of claim 26, wherein the PTH antagonist is administered together with a pharmaceutical carrier or excipient.

30. (New) A method for *in vivo* modulation of calcium ion concentration in blood comprising administering a peptide having a contiguous portion of human PTH having an amino acid sequence set forth in SEQ ID NO:1 (PTH_{1-84}), or a conservatively substituted variant thereof, exhibiting PTH antagonist activity in a therapeutically effective, but non-toxic amount, wherein the PTH antagonist has the following characteristics:

a) the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 2 through position 34 of SEQ ID NO:1 (PTH_{1-84}); and

b) the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

31. (New) The method of claim 30, wherein the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 3 through position 28 of SEQ ID NO:1 (PTH_{1-84}), and the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

32. (New) The method of claim 30, wherein the PTH antagonist is selected from the group consisting of SEQ ID NO:2 (PTH_{2-84}), SEQ ID NO:4 (PTH_{3-84}), SEQ ID NO:5 (PTH_{28-84}), and SEQ ID NO:3 (PTH_{34-84}).

33. (New) The method of claim 30, wherein the PTH antagonist is administered together with a pharmaceutical carrier or excipient.

34. (New) A method for treating a patient having osteoporosis comprising administering a peptide having a peptide having a contiguous portion of human PTH having an amino acid sequence set forth in SEQ ID NO:1 (PTH_{1-84}), or a conservatively substituted variant thereof, exhibiting PTH antagonist activity in a therapeutically effective, but non-toxic amount, wherein the PTH antagonist has the following characteristics:

a) the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 2 through position 34 of SEQ ID NO:1 (PTH_{1-84}); and

b) the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

35. (New) The method of claim 34, wherein the N-terminal amino acid residue of the PTH antagonist starts at any position spanning from position 3 through position 28 of SEQ ID NO:1 (PTH_{1-84}), and the C-terminal amino acid residue of the PTH antagonist ends at position 84 of SEQ ID NO:1 (PTH_{1-84}).

36. (New) The method of claim 34, wherein the PTH antagonist is selected from the group consisting of SEQ ID NO:2 (PTH_{2-84}), SEQ ID NO:4 (PTH_{3-84}), SEQ ID NO:5 (PTH_{28-84}), and SEQ ID NO:3 (PTH_{34-84}).

37. (New) The method of claim 34, wherein the PTH antagonist is administered together with a pharmaceutical carrier or excipient.

38. (New) The method of claim 34, wherein the PTH antagonist administration is either in a continuous or in a pulsatile manner.